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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* QIAN ZHANG, WENWU ZHU, YA-QIN ZHANG,  
and FAN YANG

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Appeal 2007-3805  
Application 09/848,706  
Technology Center 2100

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Decided: March 31, 2008

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Before JAMES D. THOMAS, JAY P. LUCAS, and  
ST. JOHN COURTENAY III, *Administrative Patent Judges*.

COURTENAY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-33. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM IN PART. We also enter a new ground of rejection against claims 28-33 under the provisions of 37 C.F.R. § 41.50(b).

## THE INVENTION

The disclosed invention relates generally to an architecture and techniques for transmitting content through heterogeneous networks (Spec. 1). More particularly, at least one embodiment of Appellants' invention is directed to streaming media content over heterogeneous networks (including wireless networks) in a manner unencumbered by the limitations commonly associated with the transport layer protocol of conventional streaming architectures (Spec. 3).

Independent claims 19 and 30 are illustrative:

19. A method comprising:

receiving a request from a wireless host for content available from a network server;

establishing a communication channel to service the request between the wireless host and the network server over a wireless network and a wireline network coupled to the server; and

adjusting transmission characteristics in one or more of the wireline network and/or the wireless network to improve transmission quality based, at least in part, on one or more control parameters of a transport layer protocol of the communication channel which distinguish wireline transmission problems from wireless transmission problems.

30. A transport layer protocol to facilitate streaming of media content across heterogeneous networks, the protocol comprising:

a congestion parameter, which provides a receiving network element with an measure of congestion incurred in transmission within the network;

a fading parameter which, when asserted, provides a receiving network element with an indication that a communicatively coupled wireless host just emerged from a fading condition; and

a BER parameter, which provides a receiving network element with an measure of bit error rate incurred in transmission within a wireless network.

## THE REFERENCES

The Examiner relies upon the following references as evidence in support of the rejections:

Zombek	US 2001/0032232 A1	Oct. 18, 2001
Liao	US 2002/0097722 A1	July 25, 2002

## THE REJECTIONS

1. Claims 1-5, 8-15, 18-21, and 25-33 stand rejected under 35 U.S.C. §102(e) as being anticipated by Zombek.
2. Claims 6, 7, 16, 17, and 22-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Zombek in view of Liao.

## PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 102, “[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation.” *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1375-76 (Fed. Cir. 2005) (citation omitted). “Anticipation of a patent claim requires a finding that the claim at issue

‘reads on’ a prior art reference.” *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed Cir. 1999) (“In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.”) (Internal citations omitted.)

## ANALYSIS

### Claims 1-5, 8-15, and 18

We consider the Examiner’s rejection of claims 1-5, 8-15, and 18 as being anticipated by Zombek. Since Appellants’ arguments have treated these claims as a single group which stand or fall together, we select independent claim 1 as the representative claim for this rejection. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Appellants make the following contentions:

The Examiner fails to point out where in Zombek it is taught, a single “network gateway . . . to establish a communication channel from the server to the wireless host through both the wireline network and the wireless network.”

(App. Br. 9).

After reviewing the record before us, we find the weight of the evidence supports the Examiner’s finding of anticipation. Regarding the argued limitation of a “single” network gateway, we note that the word “single” is not recited in the claim. Moreover, our reviewing court has repeatedly emphasized “that an indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising.’” *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000). Here, Zombek

expressly discloses that “[a] number of the protocol gateways (PGs) **116a**, **116b**, and **116c**, collectively PGs **116**, can be configured to support a specific *network* access protocol.” (¶[0072], emphasis added). Therefore, we find a broad but reasonable construction of Appellants’ claimed “network gateway” reads on Zombek’s protocol gateway(s) 116. We agree with the Examiner that the argued elements of claim 1 broadly but reasonably read on the Zombek reference, as follows:

Independent Claim 1	Zombek
a network gateway,	See Protocol Gateway 116a, Fig. 1A, ¶[0072].
coupled to each of the server and the wireless host,	Zombek discloses Protocol Gateway 116a coupled to each of the back-end server (BES) 122a and the client device 112a (i.e., wireless host), as shown in Fig. 1A.
To establish a communication channel from the server to the wireless host through both the wireline network and the wireless network,	We find Zombek discloses a communication channel to enable communications from the back-end server (BES) 122a to the client device 112a (i.e., wireless host) through both the wireline network (network 114 and/or networks 118a and 118b) and the wireless network 108, as clearly shown in Fig. 1A.

Because we conclude that Appellants have not met their burden of showing error in the Examiner’s *prima facie* case of anticipation, we sustain the Examiner’s rejection of representative claim 1 as being anticipated by Zombek. Pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii), we have decided the appeal with respect to dependent claims 2-5, 8-15, and 18 in this group on the basis of the selected representative claim alone. Therefore, we sustain the Examiner’s rejection of claims 2-5, 8-15, and 18 as

being anticipated by Zombek for the same reasons discussed *supra* with respect to representative claim 1.

#### Claims 19-21 and 25-29

We consider the Examiner's rejection of claims 19-21 and 25-29 as being anticipated by Zombek. Since Appellants' arguments have treated these claims as a single group which stand or fall together, we select independent claim 19 as the representative claim for this rejection. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Regarding independent claim 19, Appellants restate their previous argument that "Zombek fails to teach establishing a communication channel over a wireless network and a wireline, as discussed above in support of claim 1." (App. Br. 10.)

In response, we have fully addressed this argument with respect to claim 1 above. Because we conclude that Appellants have not met their burden of showing error in the Examiner's *prima facie* case of anticipation, we sustain the Examiner's rejection of representative claim 19 as being anticipated by Zombek for the same reasons discussed above for claim 1. Pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii), we have decided the appeal with respect to dependent claims 20, 21, and 25-29 in this group on the basis of the selected representative claim alone. Therefore, we sustain the Examiner's rejection of claims 20, 21, and 25-29 as being anticipated by Zombek for the same reasons discussed *supra* with respect to representative claim 19.

#### Dependent claims 6, 7, 16, 17, and 22-24

We consider next the Examiner's rejection of dependent claims 6, 7, 16, 17, and 22-24 as being as being unpatentable over Zombek in view of Liao.

Appellants contend that these dependent claims are patentable over Zombek in view of Liao for the same reasons previously argued with respect to independent claims 1 and 19 (App. Br. 13-15).

In response, we see no deficiencies with respect to the Examiner's rejection of claims 1 and 19 as being anticipated by Zombek, as discussed *supra*. Therefore, Appellants have not presented any substantive arguments directed separately to the patentability of dependent claims 6, 7, 16, 17, and 22-24. In the absence of a separate argument with respect to the dependent claims, those claims stand or fall with the representative independent claim. *See In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii). Therefore, we sustain the Examiner's rejection of these claims as being unpatentable over Zombek in view of Liao for the same reasons discussed *supra* with respect to independent claims 1 and 19.

#### Independent claims 30 and 33

We consider next the Examiner's rejection of independent claims 30 and 33 as being anticipated by Zombek.

Appellants contend that the Examiner has failed to show where the "fading parameter" element is disclosed in the Zombek reference (App. Br. 10-12).

The Examiner disagrees. The Examiner contends that the limitations recited in the preambles of claims 30 and 33 should not be given patentable weight because they are merely a statement of intended purpose (Ans. 12-13).



In response, we note that the “fading parameter” element is clearly recited in the body of both claims 30 and 33. Regarding the rejection of independent claim 30, the Examiner refers to the rejections of dependent claims 3, 6, and 8 as providing the rationale supporting the rejection of independent claim 30 (*see* Ans. 9). However, we note that dependent claims 3 and 8 (rejected under § 102) do not recite a “fading parameter” element. Significantly, dependent claim 6 (which recites a “fading timeout monitor”) is rejected not under § 102, but rather under § 103. In fact, in the rejection of claim 6, the Examiner admits that “Zombek differs from the claimed invention in that it fails to specify [a] fading timeout monitor.” (Ans. 10.) In light of this record, we conclude that Appellants have met their burden of showing error in the Examiner’s *prima facie* case of anticipation. Therefore, we reverse the Examiner’s rejection of independent claims 30 and 33 as being anticipated by Zombek. Because claims 31 and 32 depend from independent claim 30, we also reverse the Examiner’s rejection of these claims as being anticipated by Zombek.

### CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that Appellants have not shown the Examiner erred in rejecting claims 1-5, 8-15, 18-21, and 25-29 under 35 U.S.C. § 102(e) for anticipation.

We also conclude that Appellants have not shown the Examiner erred in rejecting claims 6, 7, 16, 17, and 22-24 under 35 U.S.C. § 103(a) for obviousness.

However, we conclude that Appellants have shown the Examiner erred in rejecting claims 30-33 under 35 U.S.C. § 102(e) for anticipation.

## NEW GROUND OF REJECTION

We enter the following new rejection of claims 28-33 under the provisions of 37 C.F.R. § 41.50 (b).

35 U.S.C. § 101

Claims 28-33

Claims 28-33 are rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.

Regarding claims 28 and 29, we note that a computer-readable medium (or media) having computer-executable instructions is directed to statutory subject matter so long as the language of a claim is not supported in the Specification with nonstatutory embodiments (i.e., signals, transmission mediums and the like). *See In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007) (A claim directed to computer instructions embodied in a signal is not statutory under 35 U.S.C. § 101). *Cf. In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994) (a claim to a data structure stored on a computer readable medium that increases computer efficiency held statutory).

Here, Appellants' Specification discloses that computer readable media (that includes computer storage media and communications media) is intended to broadly encompass modulated data signals including carrier waves (Spec. 41). Because Appellants' claims broadly read on signals and other nontangible transmission mediums, we conclude that claims 28 and 29 are directed to nonstatutory subject matter.

Regarding independent claims 30 and 33, we note that these claims are directed to a "transport layer protocol," as recited in the preambles of

each claim. Because a computer network protocol is merely a set of rules and associated data structures that govern communication of data over a network, we conclude that these claims are directed to abstract ideas<sup>1</sup> and/or data structures per se.

With respect to independent claims 30 and 33, the recited parameters are “information” which is not necessarily physical even though it has to be converted to a physical form, such as an electrical signal, to be transmitted. The parameters are not recited to be stored on a tangible medium which might be considered a manufacture under § 101. Thus, it is our view that the recited “parameters” of claim 30 are analogous to data structures per se, although no arrangement of the information is claimed. Therefore, claim 30 does not fall within any of the four categories of § 101. *See In re Warmerdam*, 33 F.3d 1354, 1361-62 (Fed. Cir. 1994) (claim to a data structure per se held nonstatutory). Alternatively, even if the recited parameters of claim 30 have some physical existence, such an electrical signal, nontangible physical subject matter does not fall within any of the four categories of § 101. *See In re Nuijten*, 500 F.3d at 1357.

Regarding dependent claims 31 and 32, because we find the language of these claims to be indefinite (*see* new grounds of rejection under 35 U.S.C. § 112, second paragraph *infra*), we conclude that these claims do not remedy the aforementioned deficiencies of independent claim 30 from which claims 31 and 32 depend. Therefore, we also reject claims 31 and 32 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.

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<sup>1</sup> The Supreme Court has specifically identified three categories of unpatentable subject matter: “laws of nature, natural phenomena, and abstract ideas.” *See Diamond v. Diehr*, 450 U.S. 175, 185 (1981).

35 U.S.C. § 112, second paragraph

Claims 28, 29, 31, and 32 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Regarding claim 28, we conclude that the scope of this claim encompasses two statutory subject classes: (1) the method of claim 19 from which claim 28 depends, and also (2), an article of manufacture (i.e., a computer-readable medium). We consider this hybrid claim indefinite. *See S3 Inc. v. NVIDIA Corp.*, 259 F.3d 1364, 1372 ( Fed. Cir. 2001) (“When the claims become so ambiguous that one of ordinary skill in the art cannot determine their scope absent speculation, such claims are invalid for indefiniteness.”) (citing *In re Steele*, 305 F.2d 859, 862-63 (CCPA 1962)). *Cf. IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005) (A claim directed to an apparatus and a method for using that system found to be indefinite).

Regarding claim 29, we find it unclear whether the claim is directed to a computer or to a computer-readable media. Although the claim term “comprising” is open-ended, an embodiment where a computer *is* a computer-readable media appears to be within the scope of the claim. We do not see how a computer can be a computer-readable media, as claimed. Accordingly, we conclude that claim 29 is indefinite.

Regarding claim 31, we find it unclear how a computer can be comprised of a “sender” that, within the scope of the claim, broadly reads on a person (or software) that performs the function of sending. Accordingly, we conclude that claim 31 is indefinite.

Regarding claim 32, we find it unclear how a computer can be comprised of a “receiver” that, within the scope of the claim, broadly reads

on a person (or software) that performs the function of receiving.  
Accordingly, we conclude that claim 32 is indefinite.

## DECISION

The decision of the Examiner rejecting claims 1-29 is affirmed.

The decision of the Examiner rejecting claim 30-33 is reversed.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review." 37 C.F.R. § 41.50(b) also provides that the Appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

(2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART - 37 C.F.R. § 41.50(b)

clj

LEE & HAYES PLLC  
421 W RIVERSIDE AVENUE SUITE 500  
SPOKANE, WA 99201